

Energy Audit DIY Guide

Understanding your energy consumption will help to identify ways to reduce consumption and increase the efficiency of energy used in your office, building or facility.

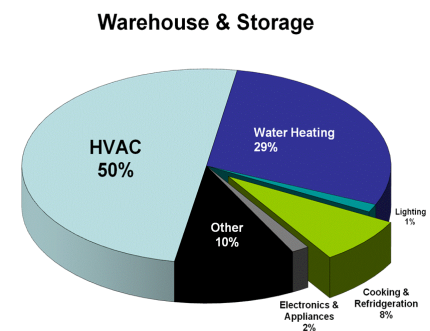
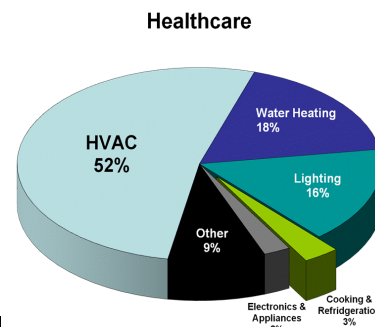
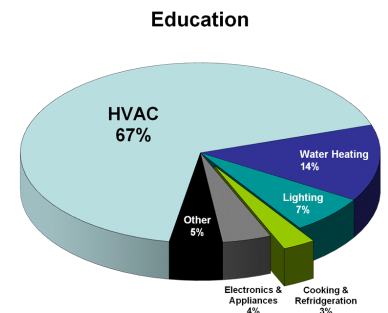
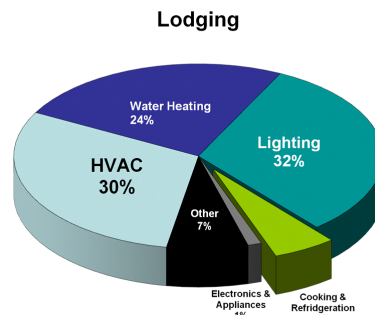
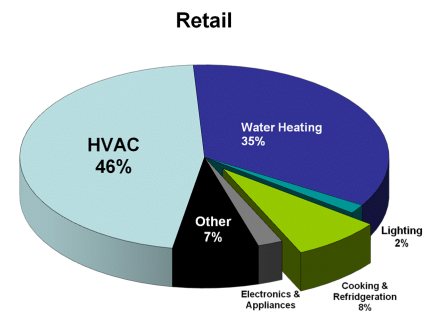
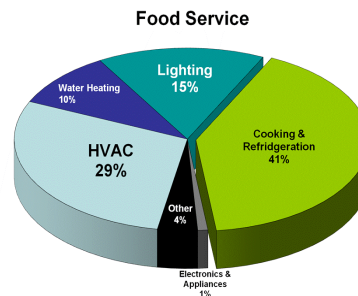
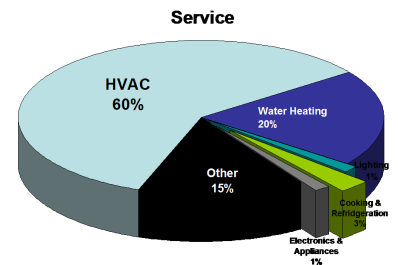
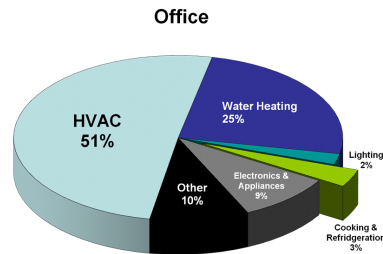
Begin your assessment by considering the primary points of energy consumption for your business and typical consumption patterns. The charts to the right show a rough estimation of typical energy usage for the business types listed (Office, Lodging, Food Service, Education, Healthcare). Use these as a guide for how energy may flow through your office, building or facility.

The steps below guide you through inventorying these major energy using systems, fixtures, electronics and appliances, assessing each for efficiency and pin pointing the best points of attack for reducing consumption and increasing efficiency.

Step 1: Using your energy bills, record your energy use over the last 12 months (or as far back as possible if less than 12 months of data is not available). Use the data log tab of the scorecard or Energy Star Portfolio Manager to compile kWh, therms and cost data.

Extrapolate kWh, therms, and cost per system as estimated out in the charts to the right to make a rough estimate of energy distribution in your building and cost associated with each.

Log Energy Data Here				
Start Date	End Date	kWh	Therms	Cost
12/4/2009	1/3/2010	2970	0	\$380.73
11/4/2009	12/3/2009	1717	0	\$228.05
10/4/2009	11/3/2009	1986	0	\$260.83
9/4/2009	10/3/2009	1855	0	\$241.88
8/4/2009	9/3/2009	1978	0	\$256.71
7/4/2009	8/3/2009	2284	0	\$293.59
6/4/2009	7/3/2009	2701	0	\$343.87
5/4/2009	6/3/2009	1604	0	\$211.62
4/4/2009	5/3/2009	871	0	\$123.27
3/4/2009	4/3/2009	1154	0	\$153.75
2/4/2009	3/3/2009	1940	0	\$245.02
1/4/2009	2/3/2009	2245	0	\$280.66
12/4/2008	1/3/2009	1511	0	\$194.88
2009 Total Cost				\$3,214.86
2009 Average Cost				\$247.30



Step 2: Inventory the major energy points, including HVAC system and settings, lighting fixtures and number of bulbs, water heater, and all appliances (including water heaters), electronics, and other energy using equipment.

Below are some guidelines for most major energy draws. Use the DIY audit as an opportunity to better understand how energy is used in your office, building, or facility, notice small changes that could lead to big savings (like turning off appliance and electronics or setting back the thermostat a few degrees), and work towards more energy efficient operations and conservation practices.

HVAC

Note the temperature settings of your thermostats. Common recommendations for temperature settings is 68 degrees in the fall and winter and 78 in the spring and summer. A programmable thermostat may be one of the best energy savers that can be installed in any office (or home). The key, however, is programming the thermostat to regulate temperature settings and reduce heating/cooling load during unoccupied hours. A setback of just one degree can change your heating/cooling costs by 4-6 percent.

If available, review the maintenance schedule for the HVAC. Make sure filters are changed regularly and maintenance is performed to ensure the system is running as efficiently as possible.

Lighting

Conduct a lighting audit by inventorying the types and number of lights throughout your building or office space. Create a plan to switch out any incandescent bulbs for CFLs, T12 fluorescent tubes for T8s or T5s for new fixtures, or installing LEDs in place of traditional fixtures. Also consider the utility of having daylight sensors and/or occupancy sensors in offices and/or common areas (remember closet and bathroom lighting). Implement these lighting efficiency improvements as lamps burn out and need replacing or as investment is appropriate.

Water Heating

Note the make, model and size of your water heater. Most standard water heaters come preset for 140 degrees Fahrenheit. For typical office use you can set it back to 120 degrees. Food service,

healthcare and childcare facilities may need the extra heat for cleaning and sanitation.

Setting the temp on your water heater back will help save energy and dollars. Using a timer to turn down the water heater during off hours may also be a possibility. And, of course, when it comes time to replace or add additional water heaters consider if a tankless model is appropriate for your demand level or, if not, select a high efficiency model right for you.

Appliances and Electronics

Document the make and model of all (or most, if not all) appliances, electronics, and energy using equipment. Note if they are Energy Star rated. Use this list to navigate new purchases, giving preference to Energy Star or high efficiency models when possible.

Watch out for phantom plug loads. Many electronics continue to draw energy even when not on. This attribute is known as standby power, which enables electronics to boot-up quickly and is roughly 10 percent of the in-use power requirement. Use a power strip with an on/off switch to completely cut power to electronics and appliances at the end of each work day. Also, unplug all chargers and A/C adapters when not in use as they continue to draw power even though they are not charging anything.

Step 3: Assess where efficiency improvements could be made, including maintenance practices and retrofits of existing systems/units as well as usage or behavioral changes that may add to efficiency. Use the strategies in the scorecard for ideas.

Step 5: Create a plan to implement efficiency improvements, energy efficiency retrofits and upgrades, and conservation practices over time. Set a reduction goal and give yourself benchmarks to measure progress against.

Step 6: Document changes to track savings over time. Measurement and benchmarking are key to substantiating the success and impact of energy saving practices and investments.